

Studies on Sensory Deprivation: I. Preliminary Studies, Part 4. Word Association Test

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STUDIES ON SENSORY DEPRIVATION I.
PRELIMINARY STUDIES
PART 4 WORD ASSOCIATION TEST

by

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Many studies of the effects of situational conditions upon projective processes have been reported. Siipola, E. et al. have dealt with Rorschach test and word association test under the time pressure condition (2, 3). The results obtained under such condition showed not only high rate of reaction but also outstanding changes in the projective process itself, as compared with the results under free condition. With respect to the word association test, the time pressure increased the number of adjective contrast type of responses to adjective stimuli (Adj-Adj-Con), whereas the free condition produced increasing noun responses (Adj-N). Siipola et al. stated that the time pressure imposed upon subjects a general limitation of the associative possibilities to those most closely related to the S's immediate impression of the stimulus; the associative process is 'stimulus bound'" (3, p.445), and that the "time pressure has as its general effect the stopping of associative process at an early stage of mere identification of the stimulus, "(3, p.446).

Now, in the present experiment, it was the purpose to inspect the effects of 48-hrs. sensory deprivation upon associative processes by comparing with those of time pressure.

Procedure

Stimulus words contained 30 adjectives, 20 nouns and 10 verbs, most of which were adopted from Kent Rozanof's list. The test was administered after 48-hrs. of sensory deprivation under usual time free condition. The stimuli were auditorily given to subjects through microphone. First response words and their reaction time were recorded. The cases in which the response words could not be performed within 90 sec. were regarded as rejection. Subjects were 10 male university students.

Results and Discussion

Mean and median of reaction time are represented in table 1. In this table, the numericals of Pressure and Free are drawn from studies of Fukuda, T, and Watanabe, Y. which were carried out in the laboratory of Tohoku University using the same stimulus words. Each of the pressure and free groups consisted of 26 subjects. Under the pressure condition, the reaction time was limited to 6 sec.

Table 1. Mean and Median of Reaction Time (in sec.)

	Sens. Depr.	Press.	Free
Mean	5.6	2.2	8.4
Median	3.8	2.1	9.5

In the table 1, it is observed that the reaction time of sensory deprivation group falls between free group and pressure group.

On the associative products, the same trends are observable. The means of Adj-Adj-Con type of responses are represented in Table 2 with mean speeds of these reactions. In the sensory deprivation group, more responses of contrast type are observed than in the free group, but fewer than in the pressure group.

Table 2. Mean number of two sorts of responses to adjective stimuli (in %) and their mean reaction time (in sec.).

Group	Sens. Depr.		Pressure		Free	
	%of Resp.	Mean React. Time	%of Resp.	Mean React. Time	%of Resp.	Mean React. Time
Adj-Adj-Con	19.0	3.1''	29.4	1.4''	4.6	5.1''
Adj-Noun	67.5	5.2''	60.9	2.4''	90.7	9.4''

But when we inspect raw data of each subject of sensory deprivation group, it is noticed that not all subjects produce many Adj-Adj-Con responses. There are two types of subjects; one type makes markedly many contrast responses, the other makes few responses. As their contrast responses almost disappeared in the retest administered under free condition after 6 to 12 months, it can safely be said that their appearance in the first experimental test is clearly due to the sensory deprivation, and moreover, these effects are different with subjects. And it is worthy of note that subjects of the two types as to associative products exactly correspond to those assorted by the activity score during sensory deprivation and by Rorschach test (1), that is, the subjects producing many contrast type of responses are also the subjects showing high activity scores.

The relations between sensory deprivation and associative processes or products are so complicated, but the results of the present experiment help to point that personality factors intervene between them.

Summary

1. The word association test was administered immediately after 48-hrs. sensory deprivation, and the results were compared with those obtained in time pressure group and free group.

2. The mean reaction time of the sensory deprivation group fell between that of the pressure group and that of the free group. And when the associative products were classified according to Siipola's method, it was revealed that in the sensory group, more of the mere grammatical contrast responses to adjective stimuli, which were regarded to show the associative processes stopping at their early stages, appeared than in the free group but fewer than in the pressure group.

3. It was also observed that some subjects produced many such contrast responses while others produced few.

4. From these results, we might conclude that personality factors played an important role between sensory deprivation and the associative processes.

References

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Zusammenfassung

Gerade nach 48 Stunden sinnlicher Entziehung (sensory deprivation) wurde den Vpn ein Assoziationsversuch vorgegeben. Das Resultat des Versuchs wurde mit demjenigen von der Gruppe unter freier Bedingung und mit der Gruppe der gedruckten Bedingung verglichen. Aus den Ergebnissen folgte dass die persönlichen oder individuellen Faktoren eine wichtige Rolle spielten.